



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

*SW*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,044	07/11/2003	Masaru Kobayashi	030673-162	3069

7590

09/03/2004

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

P.O. Box 1404

Alexandria, VA 22313-1404

EXAMINER

JIMENEZ, MARC QUEMUEL

ART UNIT

PAPER NUMBER

3726

DATE MAILED: 09/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/617,044

Applicant(s)

KOBAYASHI ET AL.

Examiner

Marc Jimenez

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-14 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-25 is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 10/117,993.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 06162004.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement filed 6/16/04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The examiner was able to retrieve most of the references except for those lined through in the information disclosure statement.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 8-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyosawa et al. (6,082,222) in view of Linzell (5,519,182).

Kiyosawa et al. teach a method of manufacturing a rigid internal gear of a wave gear device, in which the rigid internal gear comprises a main gear ring **14** and a tooth-forming ring **16** having internal teeth **18** formed on an inner circumferential surface thereof and, in which the tooth-forming ring **16** is disposed inside the main gear body **14** and integrally bonded thereto

Art Unit: 3726

(col. 2, lines 35-61), forming the main gear ring **14** from a first material that has a low linear expansion coefficient (col. 2, lines 27-28), forming the tooth-forming ring from a second material that has a high linear coefficient (col. 2, lines 30-31), pressing (col. 2m lines 48-49) the tooth-forming ring **16** into an inside of the main gear ring **14**. It is noted that the joint between the main gear and tooth-forming ring was formed by attaching pins, welding, or brazing (col. 2, lines 50-61).

Therefore, Kiyosawa et al. teaches the invention cited with the exception of diffusion-combining the tooth-forming ring and the main gear ring.

Linzell teaches that it is known diffusion-combine (col. 12, lines 10-34) rings **20,22** together. Furthermore, Linzell seeks to distinguish from the prior art by teaching that it was known to use other types of connection methods:

“..., while two pieces of metal can be glued, soldered, **brazed**, **welded**, bolted, riveted... and so on. It is even possible to make good joints that are held together simply by the friction between the two parts.” (col. 1, lines 13-16).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Kiyosawa et al. with diffusion-combining the tooth-forming ring and the main gear ring, in light of the teachings of Linzell, in order to provide a strong weld-like bond between the two bodies as suggested by Kiyosawa et al. at col. 12, line 34.

Regarding claims 9-11, Kiyosawa et al. teach the invention cited with the exception of using the claimed materials for the first and second materials.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have selected the claimed material, since it has been held to be within the general skill of a

worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. See also *Ballas Liquidating Co. v Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331. It is noted that Kiyosawa et al. teach that the main gear ring should be made of a lightweight material such as aluminum alloy or the like and the tooth-formed member should be made of a high strength and wear resistance material such as ferrous or copper material. Applicant's specification discloses on page 10, lines 8-12 that "In the present embodiment, the tooth-forming ring 12 is formed of an abrasion-resistant and strong material, while the main gear ring 11 is formed of a lightweight material.". Therefore, the particular combinations used are clearly a matter of obvious design choice because the materials are chosen such that the main gear ring should be made of lightweight material and the tooth-formed member should be made of high strength and wear resistance material. Furthermore, it is noted that Linzell teaches that it is known to bond any type of material together (see col. 6, lines 10-24).

Regarding claim 12, Linzell teaches providing a taper between the joints (col. 17, lines 21-24) to facilitate lead-in insertion.

Regarding claim 13, Kiyosawa et al. teach that a gear cutting process for forming the internal teeth on the tooth-forming ring is performed after the tooth-forming ring has been joined to the main gear ring to form a single body (col. 2, lines 62-65).

4. **Claims 8-14** are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Kiyosawa et al. in view of Linzell and either one of Carlson (4,663,813), Ferrary (3,239,699), and Belshaw (1,347,671).

It is noted that the claims do not preclude the use of splines, serrations, or baffle means **24** of Kiyosawa et al.

However if the claims are amended to preclude the use of splines, serrations, or baffle means, it is clearly known to provide a connection without baffles, splines, or serrations as demonstrated by either one of Carlson, Ferrary, or Belshaw between internal gearing and an outer ring. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to provide a connection without baffles, splines, or serrations in Kiyosawa et al., in light of the teachings of either one of Carlson, Ferrary, or Belshaw, in order to reduce the number of machining steps to create the baffles, splines, or serrations. The use of the claimed materials is deemed to be an obvious matter of design choice as described above.

*Allowable Subject Matter*

5. Claims 19-25 are allowed.

*Response to Arguments*

6. Applicant's arguments filed 6/7/04 have been fully considered but they are not persuasive.
7. Applicant argues that it is unclear in Kiyosawa et al. how the aluminum alloy forming gear body member **14** has a high linear expansion coefficient and the ferrous or copper material forming the tooth-formed member **16** has a low linear expansion coefficient. The way the claims are written, there is no indication what materials the high and low linear expansion coefficient materials are compared to. The claims recite "forming the main gear ring from a first material

Art Unit: 3726

that has a low linear expansion coefficient” and “forming the tooth-forming ring from a second material that has a high linear expansion coefficient”. Kiyosawa et al. uses aluminum alloy for the body member **14**. Clearly the material of the body member **14** has a linear expansion coefficient. The linear expansion coefficient of the body member **14** is considered “high” because compared with numerous other materials, it has a higher linear expansion coefficient. Kiyosawa et al. uses ferrous or copper material for the tooth-formed member **16**. Clearly, ferrous or copper material has a linear expansion coefficient. The linear expansion coefficient of the tooth-formed member **5** is considered “low” because compared with numerous other materials, it has a lower linear expansion coefficient. Therefore, it is stressed that the claims are written such that there are no limiting materials with which the claimed materials are being compared to.

8. Applicant's arguments with respect to claims 9-14 fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

### *Conclusion*

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 3726

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### *Interviews After Final*

10. Applicant note that an interview after a final rejection will not be granted unless the intended purpose and content of the interview is presented briefly, in writing (the agenda of the interview must be in writing) to clarify issues for appeal requiring only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

### *Contact Information*

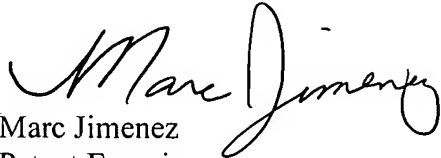
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is (703) 306-5965. The examiner can normally be reached on Monday-Friday between 5:30 a.m.-2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (703) 308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 3726

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Marc Jimenez  
Patent Examiner  
AU 3726

**MJ**

August 24, 2004